

LOSING WEIGHT

Source: www.grapeaperacing.com

SUPPORTING THE FRONT-CLIP

My goal was to mount the Harwood nose without have any fasteners showing. These kits are meant for race cars and are usually mounted with Dzus fasteners all the way around. I did not want that look; I wanted it to look stock, just lighter. At first I thought it was going to be easy, but in the end it took a lot of work to make it look good.

Along the front it was very easy, the original header panel to mount the headlights is fiberglass and fit good under the new nose. All I had to do was bond the original header to the new nose; this supported the nose all the way across to the front, eliminating the need for any additional bracing.

The Harwood nose is not strong enough to support a hinged hood. I was dead set on a hinged hood, so I cut the bracing from the original fenders and bonded it to the glass fenders. This gave plenty of support along the side and gave it the factory look under the hood.



The original fender braces are strong enough to support the hinged hood.

I then had everything needed to mount the top of the clip, but nothing at the bottom. The bottom rear of the fenders was mounted just like the tops. I cut the bracing from the factory fenders & bonded them inside

the glass fenders. The only difference was that since you couldn't see them once installed, and they did not need to support as much weight, I could lighten them up a lot. I went at them with the plasma cutter to remove as much unnecessary metal as I could. I could have done the same thing to the upper braces, but when I open the hood, they are in plain sight. Even with the hood open, I want the body looking stock. I could have easily lost another 30-40 lbs. by using a lift off hood. A lift off hood is more than 20 lbs lighter than a bolt on hood and does not need any additional bracing. I did not want the look of Dzus fasteners around the hood.

I was confident that the SEM bond adhesive would have no trouble holding the top because the whole nose basically sat down in place with no stress. At the bottom, I wanted to be safe, so along with the adhesive I used 2 large head aluminum rivets on each side to hold the fenders to the bracing. These rivets are at the very bottom where the panels wrap under the car, so they are out of sight.



The lightened rear braces gave me all the original mounting bolt locations, making the new clip very easy to bolt on.

RADIATOR SUPPORT

I made a cross-member between the front frame rails to mount the radiator to lower radiator in the car so I could use a larger core.



Here is what the radiator support looked like after removing weight.

Since the radiator support did not have to hold the weight of the radiator and the body panels it had to support were lighter, it did not have to be nearly as strong. I was able to remove a lot of metal and cut the weight of the radiator support by over 50%. The finished support was 7 lbs., which is 9 lbs. lighter than it was originally. Once the radiator support was bolted in place, the entire clip bolted on just like the factory parts would have, giving me all the factory adjustments. Aligning body parts is a tedious job, but it would have been a lot more work if I did not have all the adjustment points of the factory panels. Bolting it together was no more difficult than bolting on the stock panels. I think it was actually easier, because it was 1 piece, the fenders already fit perfectly to the nose.

HEADLIGHTS AND TURN SIGNALS

The next step to make it look stock was to put some lights in there. This proved to be the most difficult part of the whole install. Simply cutting out the headlight and turn signal holes was easy; the problem was that this nose was not designed for bezels. To look stock, I needed the bezels and they just did not fit. The solution was to totally cut out the areas around the headlights and front signals, then bond in the pieces from the stock urethane nose. SEM Bond makes an adhesive for bonding fiberglass and urethane together, as well as flexible filler than can be sanded to shape for the final body work. I am luck I had a friend who was a PPG

Tech Rep, because there is not way I could have done such a good job on it. Once the factory nose pieces were in place and the body work was done, everything fit together perfectly. If you do not care about the stock look, all that is needed is to cut out the round openings for the headlights. I have seen some people paint bezels on, which looks fine from a distance, but pretty tacky up close.



Here is the clip ready to trial fit on the car. The glass hood is in the background leaning against the stock steel hood.

The grill bolts to the factory header panel, so the only thing that needs to be done to the nose is to make sure it is cut out enough so that the grill fits through it. The lower grill is solid from the factory, so I left it solid. If I need more airflow, I can always cut it out later. If not, it's stronger as 1 piece.



This is the nose just about ready to install on the car.

At this point I used resin and fiberglass matting to strengthen the areas near the fronts of the fenders, where the stock body seam between the fenders and the nose would have been. I did this because I was going to be cutting a groove there to give the appearance of a seam.

I did not cut out for the side marker lights at this point. The side markers need two holes on each side leaving a very thin piece of fiberglass between them. I wanted until the last minute before paint so that they would not get damaged before we install the lights.



It's hard to see in this picture, but the holes are cut for the side marker lights. The tape line is where the groove will be cut so it looks like the factory seam.

I cut the groove by hand with a fine tooth hack saw blade. It sounds primitive, but worked just fine. The factory fender louvers were installed the same as they are in a stock Z28. The only thing left to do is a final guide coat of color and block it out to make sure the body work was ready for paint. We did that, then primed and painted it.

The picture above was the day before I decided to pull the tunnel rammed engine out and build the twin turbo engine. I ended up selling the hood with the hole in it and buying a new one. The engine got torn down and parted out.



Here it is painted and ready for final assembly.

It took a lot of time and work, but I am very happy with the way it turned out. It ended up looking stock and about 300 lbs lighter. Losing the front bumper and brackets shaved almost 100 lbs. alone. 100 lbs. from the farther point forward too! That should really help traction.

OTHER AREAS I LOST WEIGHT

Since I have a roll cage, there is little need for the factory door crash braces. Removing them saved over 50 lbs. I had to drill the spot welds and cut them in half to get them out, so it took some welding any body work, I ended up painting the doors as well.

Under the hood I lost a few lbs as well. I run aluminum heads, intake, water pump, radiator and flywheel. The power steering box was replaced with a Flaming River Manual box. The power brakes are gone as well; I use a Willwood aluminum master cylinder. The stock combination valve was replaced with a Willwood residual valve and adjustable proportioning valve to reduce pressure to front brakes. With the front being a lot lighter, less braking pressure is needed for equal braking.



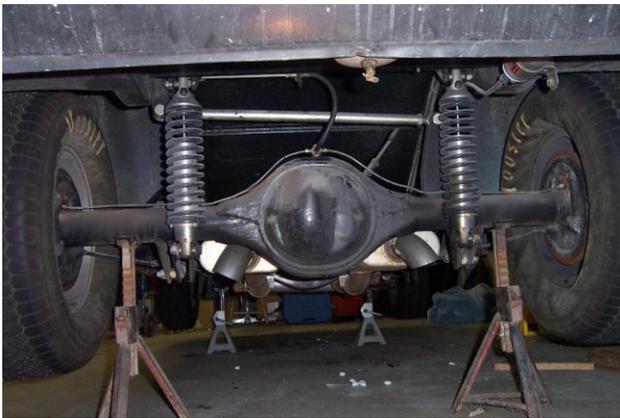
With all the weight I lost from the front-end, the car sat a little high in front.

I had to get lighter font springs to get the car back down level. I also used tubular suspension arms to gain adjustability and lose more weight up front. The adjustable upper A-Arms allowed me to get more

positive caster than the stock A-Arms would allow, which helps high speed stability.

On the inside I lost most of the heater components. The only thing I have is the blower motor and the ducts to the defrosters. Sometimes a little air is needed to keep the windshield from fogging. I wanted to keep the factory bucket seats, because I had just recovered them, but I needed a safety harness and it did not fit around the seat and over my shoulders correctly. I went with lighter APC racing seats with the holes needed to correctly run the 5 point harnesses. The rear seats were removed when I tubbed it.

In the rear I eliminated the leaf springs by using ladder bars and aluminum coil over shocks. The set up is quite a bit lighter than the factory leaf spring set up. The rear uni-body was gutted and replaced with a Chassis Engineering rear frame kit. This may be hard to believe but the uni-body was heavier. This was probably due to the bracing for the rear seats. The tubbed car has nothing but sheet metal filling the gap between the frame rails. The stock uni-body has some thick metal around the front leaf spring mounting points, which was eliminated.



The Eagle Aldin aluminum coil over shocks and Chassis Engineering suspension is lighter and hooks a lot better than the factory leaf spring suspension.

THE FISHED PROJECT

The complete car came in at 3150 lbs. with me in it and 16 gallons of gas. That is over 700 lbs. lighter than stock despite the heavier Ford 9" rear, roll cage and turbo system.



It's hard to tell that the car is over 700 lbs lighter than stock.

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